

An Analysis of Livestock Prices in Nicaragua



Ervin F. Leiva and Jose A. Lopez
College of Agricultural Sciences and Natural Resources

Introduction

This study conducts a price determination analysis using data from the Nicaraguan Cattle Auction (NCA); reports detailed information about cash price differences by animal classification, weight range (kg), and price (\$/kg); provides insight into auction price determination and its correlation with the futures market; and estimates the optimal rate of weight gain for re-auctioned cattle.

The objective of the study is to determine the optimal weight to sell or buy cattle considering the cash price offered at the auction.

The study assists buyers and sellers in their decision making process when bidding and helps them understand information from the futures market to predict price differences, and reduce price risk and uncertainty.

Data

The NCA is the main cattle cash market in Nicaragua. It conducts biweekly auctions for livestock. Producers, slaughter houses, intermediators, local butchers, and merchants are the main bidders. NCA data are used by the Nicaraguan Central Bank as reference for cattle prices.

This study collected data from 119 auctions over the last five years, from 2015 to 2019, consisting of 3,310 transactions detailing gender, weight range (kg), auction price (\$/kg), and cattle classification.

Methodology

This study uses a hedonic econometric model, where the dependent variable is the spot auction price (or basis) and the independent variables are related to quality attributes and prices from the futures market. The study provides insight into auction price determination and its correlation with the futures market.

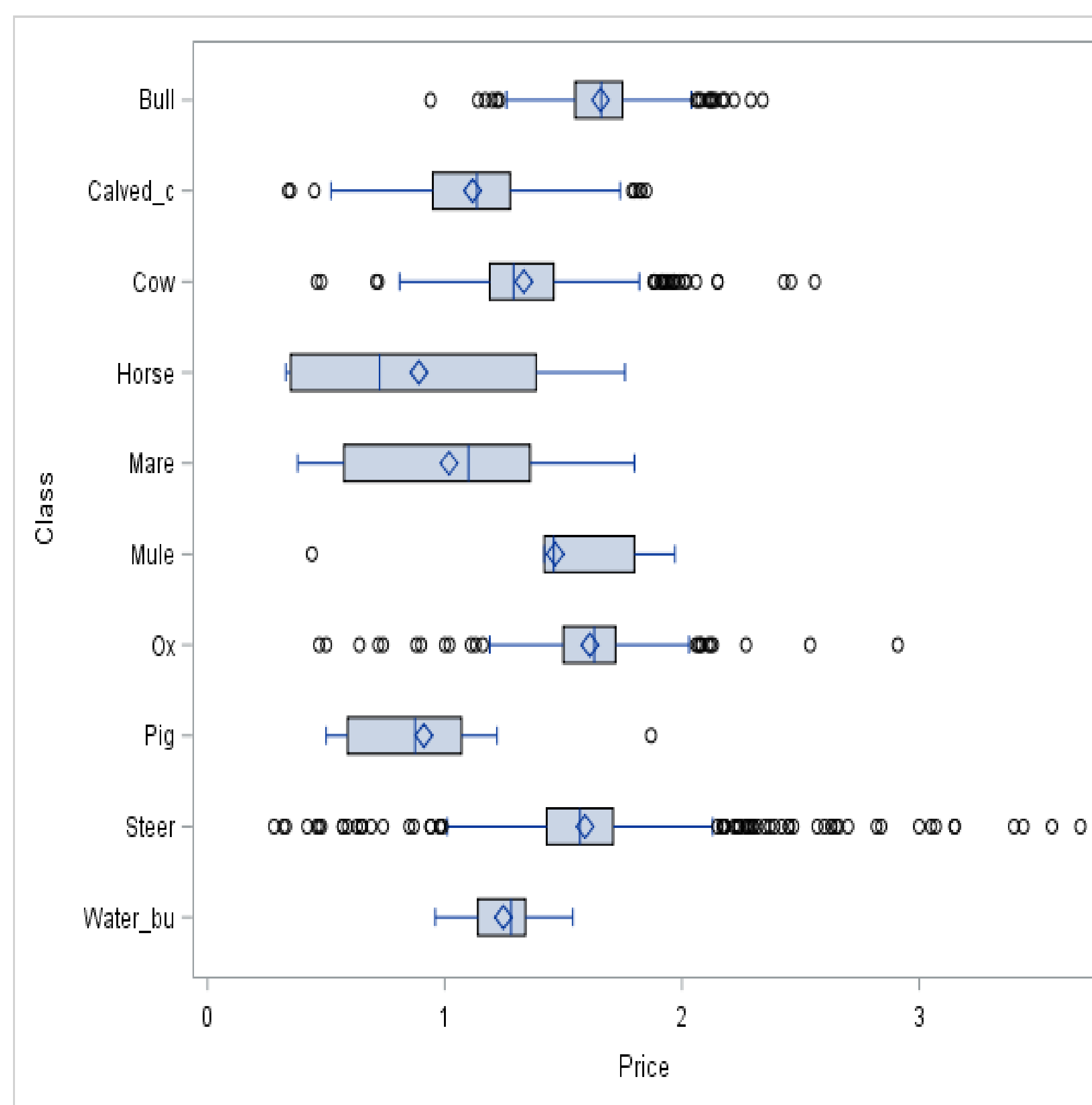


Figure 1. Box Plots for Price (\$/Kg) by Animal Classification, 2015-2019

Table 1. Descriptive Statistics for Heads (Count), Weight (kg), and Price (\$/kg) for Bull, Cow, Ox and Steer, 2015-19

Bull					
Variable	N	Mean	Std Dev	Min	Max
Head	828	4.03	3.45	1.00	21.00
Weight	828	528.50	132.62	25	925.00
Price	827	1.66	0.17	0.94	2.31
Cow					
Variable	N	Mean	Std Dev	Min	Max
Head	654	30.24	33.59	1.00	179.00
Weight	654	289.14	157.86	25.00	825.00
Price	653	1.33	0.24	0.46	2.56
Ox					
Variable	N	Mean	Std Dev	Min	Max
Head	541	1.97	1.89	1.00	23.00
Weight	541	523.43	122.82	75.00	825.00
Price	541	1.61	0.22	0.47	2.91
Steer					
Variable	N	Mean	Std Dev	Min	Max
Head	1091	25.44	24.74	1.00	137.00
Weight	1091	261.18	139.95	25.00	725.00
Price	1091	1.59	0.32	0.28	3.60

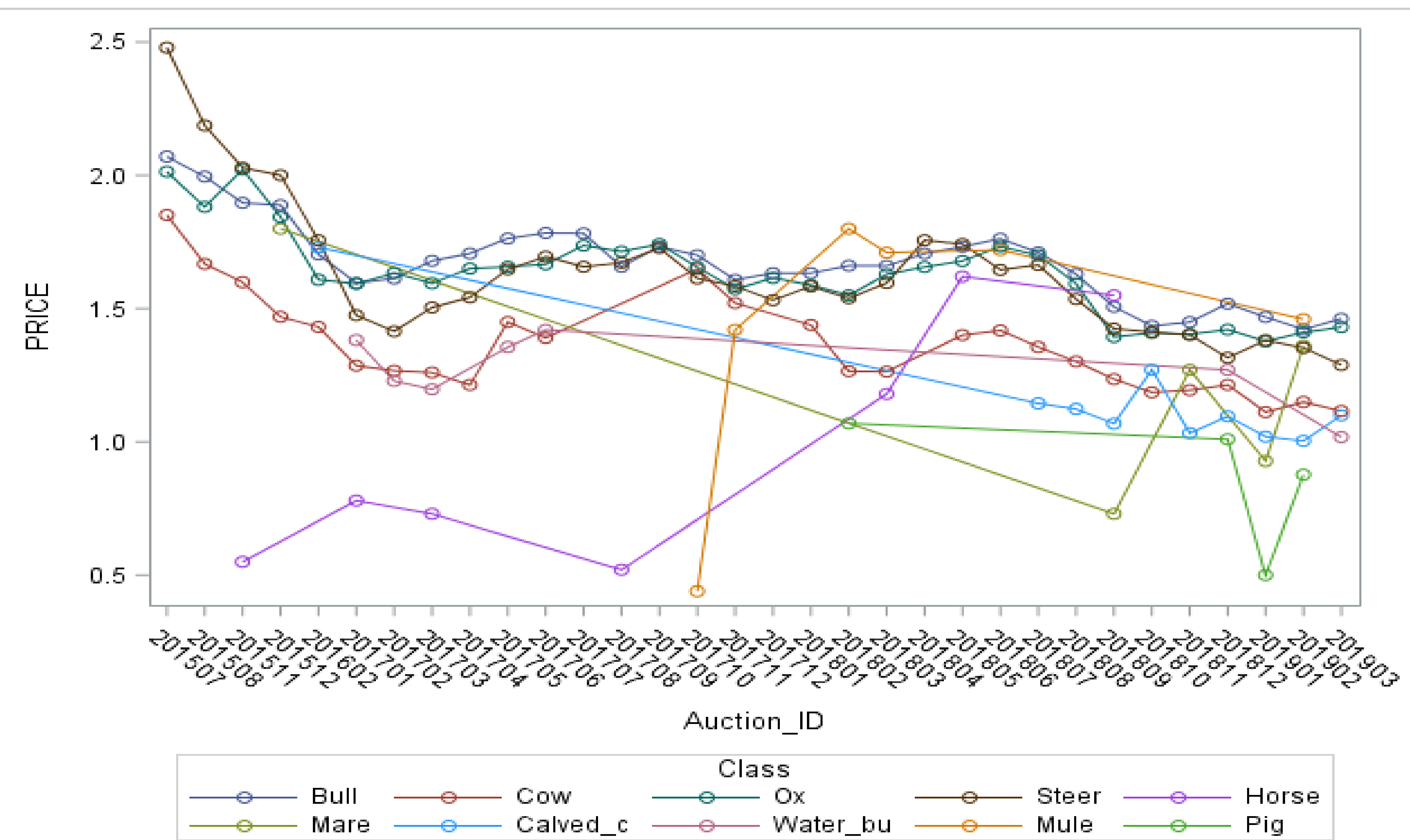


Figure 2. Series Plot of Auction ID Versus Price (\$/Kg) by Animal Classification, 2015-2019

